



DEPARTMENT OF THE NAVY

OFFICE OF LEGAL COUNSEL
PORTSMOUTH NAVAL SHIPYARD
PORTSMOUTH, NH 03804-5000

5720

Ser 100L/003

Sanford Regional Technical Center
Kathy Sargent, Director
52 Sanford High Blvd.
Sanford, ME 04073

RE: DON-NAVY-2016-004077

Dear Ms. Sargent:

This is a final response to your 14 January 2016 Freedom of Information Act (FOIA) request for certain educational and program information on the Portsmouth Naval Shipyard's lesson plans for Non-Destructive Testing curriculum.

This is a final response to your FOIA request. I considered your request pursuant to the Privacy Act, 5 U.S.C. §§ 552a, et seq., as amended, the Freedom of Information Act and Secretary of the Navy Instruction 5720.42F.

The charges for processing your Request have been reviewed and you have not been assessed any fees or costs. The decision whether to assess fees and costs are taken on a case by case basis. The decision regarding fees and costs in this case is no indication as to how a future request will be administered.

If you have any questions regarding the foregoing, please contact me at telephone (207) 438-1752 or via email at scott.w.flood@navy.mil, citing the FOIA Case Number DON-NAVY-2016-004077.

Sincerely,

Scott W. Flood,
Assistant Counsel

Enclosure:

CD ROM & written information

Visual Inspection (VT)

Equipment used by the shipyard in execution and training

Classroom training material:

- Nondestructive Testing handbook (ASNT)
- AWS 2.4
- Specifications and procedures

Hands-on material:

- Dial calipers
- Micrometers
- Bevel Protractor
- Dial depth gauges
- Optical comparators
- Machinist scales
- Flash lights
- Undercut gauges
- Thickness/feeler gauges
- Fillet radius gauges
- Socket weld gauges
- Taper gauges
- Assorted wire sizes & pin gauges
- Mirrors
- Borescope

Mock-ups/test props used in training/certification

- Structural butt and fillet/tee welds
- Socket welds
- Piping butt welds
- Partially completed piping welds
- Tack welds
- Structural fit-ups
- Piping fit-ups
- Piping end-preps
- Castings
- Forgings

Appropriate class size

- 4-6 students for lab work
- 12 students for classroom sessions

Facility Requirements

- Storage for heavy samples

Ultrasonic Inspection (UT)

Equipment used by the shipyard in execution and training

Classroom training material:

- General Dynamics Classroom Training Handbook
- ASNT Ultrasonic Testing Student Package
- Specifications and procedures

Hands-on material:

- Ultrasonic flaw detector
- Compressional transducers
- Shear wave transducers
- Transducer cables
- Calibration standards
- Ultrasonic couplant

Mock-ups/test props used in training/certification

- Butt welds
- Tee welds
- Brazed joints
- Pipes
- Step wedges
- Castings
- Pitted/corroded samples

Appropriate class size

- 6-8 students for lab work
- 12 students for classroom sessions

Facility Requirements

- Heavy duty lab tables
- Storage for heavy samples

Magnetic Particle Inspection (MT)

Equipment used by the shipyard in execution and training

Classroom training material:

- General Dynamics Classroom Training Handbook
- ASNT Magnetic Particle Testing Student Package
- Specifications and procedures

Hands-on material:

- Prod Equipment (power pack, cables, prods - dual prod assembly)
- Portable electromagnetic yokes
- Stationary wet MT inspection unit
- Wet MT inspection medium (suspension and particles)
- MT particles in various colors
- Powder bulbs
- Aspirators
- Black light
- Mirrors
- Fluorescent lights
- Flashlights
- Segmented field indicator gauges
- Gauss gauges
- Calculator
- Measuring devices
- Safety glasses

Mock-ups/test props used in training/certification

- Butt welds (final and partial)
- T welds
- Lifting & Handling gear
- Base material plates
- Threaded fasteners

Appropriate class size

- 4-6 students for lab work
- 12 students for classroom sessions

Facility Requirements

- Power supply
- HAZ material storage and disposal
- Darkened room for wet MT
- Storage for heavy samples

Liquid Penetrant Inspection (PT)

Equipment used by the shipyard in execution and training

Classroom training material:

- General Dynamics Classroom Training Handbook
- ASNT Liquid Penetrant Testing Student Package
- Specifications and procedures

Hands-on material:

- Chemicals:
 - Penetrant
 - Remover
 - Developer
 - Isopropyl Alcohol (Remover may be used in place of isopropyl alcohol)
 - Emulsifier
- Lint free wipes
- Swabs or brushes for penetrant application
- Flashlights
- Fluorescent lights
- Stopwatches
- Measuring Devices
- Handheld Mirrors
- PPE: Gloves, Safety Glasses

Mock-ups/test props used in training/certification (all with natural or manufactured flaws)

- Welded plates (final and partial)
- Welded pipes (final and partial)
- Machined parts

Appropriate class size

- 4-6 students for lab work (based on number of vent hoods)
- 12 students for classroom sessions

Facility Requirements

- HAZMAT storage and disposal
- Vent Hoods
- Sink

Notes:

In addition to the training provided for individual NDT methods instruction also includes a general introduction to NDT that covers:

- Metal fabrication
- Welding basics
- Discontinuity types
- Training and qualification requirements
- Overview of all NDT methods

All test props contain artificial or natural discontinuities including surface linear discontinuities, surface rounded discontinuities and, for the UT method, various types of internal discontinuities. Commercially available test props are an option but discontinuities are usually gross and suitable only for early stages of learning. Props may be manufactured to suit specific needs by in-house welding and the use of precision micro-machining (PH Tool in Pipersville, PA is an excellent resource).

The list of materials provided includes items needed for a basic training program. There are also many specialized and advanced applications for each NDT method that could be added to a training program if desired.

Used equipment and donations of equipment may be available from vendors or businesses to reduce cost.

In addition to a classroom/lab area with work benches, an area for large mock-ups of structures and piping systems would be ideal. Construction of the mock-ups would be a great project for the school's welding program.

The welding and NDT programs would benefit each other in providing a steady source of samples for NDT students to inspect and providing an enhanced quality assurance component to the welding program.

Our NDT Training and Test Examiner groups are very interested in assisting with this project in any way that the school might find helpful. A meeting may be helpful to refine these recommendations.